Screening and diagnosing diabetes in optometrists' practices: an evaluation of perceptions, attitudes and beliefs

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ABSTRACT

In the UK, optometrists examine 17 million people yearly, many of whom will not have consulted a doctor and may have undiagnosed diabetes. Selective testing in optometry practices presents a new detection strategy.

The purpose of this research was to ascertain optometrists' perceptions, attitudes and beliefs towards diabetes and screening, prior to evaluating a pilot service.

Focus groups and interviews were conducted with 21 optometrists in Northern England. Analysis was based on grounded theory.

Four themes emerged: varying awareness of diabetes and its early diagnosis, a reluctance in accepting a screening role, organisational barriers in implementing such a service, and controversies around the changing roles of optometrists. Although optometrists' awareness of diabetes was varied, all had seen patients they suspected of having diabetes and felt that the public under-estimated risks of diabetes. Some felt that diagnosis of asymptomatic diabetes was unnecessary, although most felt that early diagnosis would be beneficial. Optometrists believed that the public and doctors had mixed attitudes to their possible involvement in screening. Specific barriers included additional cost, time, remuneration and litigation fears. However, optometrists felt that their professional role has evolved and that a greater, extended clinical involvement would be positive.

In conclusion, optometrists are willing to carry out capillary blood glucose tests, provided that the scheme is simple, is supported by other health care professionals and is properly funded. There is a clear advantage in identifying undiagnosed diabetes in people attending optometry practices who are not accessing other health care providers.

KEY WORDS

diabetes; screening; detection; optometrist; optician

Introduction

Optometrists carry out around 17 million sight tests a year in the UK(1). They see many patients who, while having no formal diagnosis of diabetes, may have signs or symptoms of diabetes. Currently, optometrists do routinely ask about risk factors for diabetes and refer any patients with ocular changes to the general practitioner (GP). The College of Optometrists guidelines state that history should include 'relevant personal or family history of an ocular or general health nature'(2). Nonetheless, it is likely that opportunities are being missed to identify individuals at high risk of having undiagnosed diabetes.

Diabetes is an increasing problem, with more cases of type 2 diabetes being diagnosed.(3) The estimated prevalence of all types of diabetes in England in 2001 was 4.41%. This included an estimated 2 002 000 people with type 2 diabetes of whom only two-thirds were diagnosed(4). Due to the insidious nature of the disease, many people are unaware that they have diabetes until complications occur (5).

Diabetes is a chronic disease that is suitable for screening as it is common, has a screening test and has effective management. In the UK, detection often occurs when people attend their GP. It has been suggested that other health care providers may be in a position to offer detection services.(6–8)

Pharmacists have produced guidelines for screening in high street locations.(9) Optometrists are also in a suitable position to assess those patients who are at risk and to perform capillary blood glucose measurements.

The purpose of this research was to evaluate optometrists' knowledge, attitudes and perceptions to testing blood glucose in parallel to sight testing. Although other allied health care professionals such as pharmacists and podiatrists have offered this,(6,8) optometrists have not done so, to date.

Method

Subjects and setting

The ethics committee of the School of Medicine and Health, Durham University, granted ethical approval for the research. We utilised a qualitative approach, with a combination of focus groups and interviews. Stratified sampling was used to recruit participants, ensuring that there was a representative sample of gender, practice type (multiple, independent or domiciliary), employment type (locum, employed, own practice) and employment status (full or part time). Potential participants in Northern England were contacted by letter and followed up by telephone. Fifty optometrists were contacted; 23 agreed to take part but two were unable to attend. Of the 21 participants, 12 were male and nine female. The mean length of time qualified was 17 years (range three to 37 years); 15 (71%) were full time and six (29%) part time. All types of high street practices were represented; 16 participants worked in one or two practices, five regularly worked in three or more practices.

Four focus groups were held, initially lasting between 45 and 60 minutes. Interviews were carried out with participants who were not able to attend the groups. Groups were arranged so that participants were not in the same group as that of a work colleague. (Table 1 provides the details of participants.)

Table 1. Participant details

Participant	**Gender**	**Years qualified**	**Employment type**	**F/T P/T**	**No of practices**	**Type of main practice**
A1	M	32	Employed	F/T	1	Multiple – large
A2	F	33	Employed	P/T	1	Independent – small
A3	F	22	Employed	F/T	1	Multiple – small
A4	M	12	Own practice	F/T	2	Independent – small
B1	M	23	Own practice	F/T	1	Multiple – large
B2	F	26	Own practice	F/T	1	Independent – small
B3	F	12	Employed	P/T	1	Multiple – large
C1	F	37	Locum	P/T	2	Multiple – small
C2	M	35	Own practice	F/T	2	Independent – small
C3	M	27	Own practice	F/T	3	Independent – small
D1	F	7	Locum	P/T	2	Independent – small
D2	M	7	Own practice	F/T	2	Independent – small
D3	F	7	Employed	F/T	2	Independent – small
D4	F	7	Employed	F/T	2	Independent – small
D5	M	3	Employed	F/T	3	Independent – small
D6	M	7	Employed	F/T	3	Independent – small
D7	M	7	Employed	F/T	2	Independent – small
E1	M	6	Employed	F/T	3	Independent – small
F1	M	20	Employed	F/T	1	Multiple – small
G1	M	21	Locum	P/T	4+	Independent – small
H1	F	7	Employed	P/T	1	Domiciliary

Collection and analysis of data

The interviews and focus groups were carried out by JHH and were recorded and transcribed. The 'pragmatic variant' grounded theory approach was used in analysing the data to generate the themes and categories.(10) The data were coded by two researchers who collaborated on identifying the themes. The analysis began after the first group. This allowed themes that emerged in the course of the discussions to be explored in later groups and interviews.

After the four focus groups and four interviews, it was agreed that saturation had been reached (11) as no new themes were emerging.

Results

Four main themes were identified from the discussions: awareness of undiagnosed diabetes, acceptability of a screening service, barriers to the implementation of a detection service, and the current and developing professional roles of optometrists.

The first three themes were split into several categories. Awareness of diabetes considered patients' and optometrists' awareness of the disease. Acceptability of a screening service to patients, optometrists and GPs was discussed. Barriers to implementation included cost, infection control, training and liability.

Discussion

This qualitative approach enabled us to gain insights into optometrists' knowledge, perceptions and beliefs around diabetes and its detection. In addition to clinical issues we also discovered important professional and organisational concerns, some of which were around the evolving role of optometry as a profession.

Optometrists were aware of risk factors for diabetes and reported seeing patients whom they suspected of having undiagnosed diabetes, often due to signs such as refractive changes. Most felt they had some knowledge of diabetes, though some felt they did not have adequate knowledge to confidently refer a patient following screening. However, all reported that they had referred patients for investigation for diabetes following the eye examination if ocular changes were found. Many felt that, while some patients were aware of the risks of developing diabetes, they underestimated their risk or did not fully comprehend the nature of the disease and the associated risks. The role of the optometrist in exploring this was seen as limited.

Cost was felt to be a significant barrier in the implication of any screening programme in optometric practice. There was a strong feeling that the current funding for the sight test was inadequate and extended roles could not be done as part of the current full sight test. In 2005–2006 the reimbursement for a sight test was £18.32, but the actual cost of a sight test at that time was calculated to be around £37.(12) This 'under-funding' of the sight test and the need to cross-subsidise from spectacle sales were likely to influence extended schemes and extended roles. This reflected a survey in which 14% of UK optometrists participated, where 70% listed remuneration as a factor that would prevent them from being involved in extended therapeutic roles.(13) Schemes that

had been successfully implemented at a local level which used optometrists to screen people with known diabetes for diabetic eye disease have been funded separately from the standard General Ophthalmic Services (GOS) sight test fee.14,15 With the current method of funding sight tests, any scheme for testing blood glucose levels would have to be funded separately from the routine sight test to make it financially viable for the optometry practices.

Optometrists did express the feeling that most patients would accept them offering a screening test as long as it was more convenient than other options, such as an appointment with their GP. Many participants reported seeing patients who did not routinely access other health care services; here the optometrist was in a unique position to help. It was suggested that while some people would access all health care services available to them for routine tests whether they were experiencing symptoms or not, others would not access health care unless they believed there was a problem. If people experience difficulty with daily tasks such as reading or driving they may visit on optometrist before other health care providers. Some optometrists were concerned that people will not accept advice or services that are not directly related to the eye. However, it has been suggested that optometrists are in an ideal position to provide information or refer for non-ocular issues such as smoking cessation services(16) or depression.(17) It was suggested that optometrists do have a role to play in general health education.

We also discovered contradictory perceptions; for example, although most optometrists considered undiagnosed diabetes worth discovering, a minority felt that it was unnecessary to identify people who had no symptoms or complications. It was suggested that the health system would not be able to cope with the increased number of people with diabetes. This was contradicted by other participants who felt that the increased initial cost in treatment would be worthwhile, both in terms of the health of the individual patient and the reduction in the cost of treating complications in the long term. These sentiments, perhaps surprising to those working in diabetes, illuminate the extent to which some optometrists will need to be informed and won over.

Many of the factors that were discussed in the course of the focus groups and interviews – cost implications, GPs' attitudes towards optometrists, public perception of the role of optometrists and the expectations of what optometrists can do and should do – relate to the development of the professional role of the optometrist and the conflicts between the professional and business aspects of the profession. Concerns over conflicts between professional motives and business motives have been acknowledged in optometry in the United States.18 The same factors apply to UK optometrists, where business motives for the need to make a profit can conflict with the professional motive of providing a health care service. The introduction of advertising and competition from unregistered spectacle sellers in 1984,(19) and the growth of the multiple practices changed the business modelof optometry. The relative under-funding of the GOS sight test and the resulting need for crosssubsidisation of the sight test by spectacle sales(12) add further conflict between the professional motives and business motives.

Methodological considerations.

The 29 optometrists who did not take part were similar in the practice type and length of time since qualification. It was not possible to determine how many practices they worked in and their employment status from the General Optical Council register. However, the proportion of full time to part time optometrists in the sample was similar to the national figures. Nationally, around one-

third of optometrists are part time.(1) It is not possible to determine if the views of those not taking part were different from those who participated. Saturation was reached after three focus groups. Some of the emerging themes had the potential to be influenced by local factors, but the findings of this research are likely to be applicable nationally.

Respondent validation was obtained by each participant being sent a summary of the outcomes from the group or interview in which they participated, along with a report from the other groups, and using a Likert scale to rate their agreement. Fifty-two percent (11) replied with each group or interview represented. All either agreed or strongly agreed that the summary represented the group's discussions.

Conclusions

The National Service Framework for diabetes contains a number of standards in the prevention, diagnosis and management of the disease that are to be achieved by 2013. Standard 2 states that 'The NHS will develop, implement and monitor strategies to identify people who do not know they have diabetes'.(20) Optometrists are in a position to offer services to identify people who may have diabetes, potentially those not accessing any other health care provider. For these people, the visit to an optometrist can be an opportunity to receive general health care advice and additional services.

Although optometrists do occasionally refer patients for investigations on the basis of ocular findings, offering blood glucose screening in practices would potentially allow those people not accessing other health care the opportunity to be tested before complications become apparent. While people do attend optometrists with overt ocular signs of diabetes, they are seen infrequently. Many more people are seen who may have risk factors for diabetes, and may be at risk of having undiagnosed disease. It may be possible for optometrists to identify these people by using blood glucose testing before complications have presented.

Our findings show that if a service is adequately funded, is convenient for both optometrist and patient and has the support of other health care professionals, it is potentially feasible for screening to be carried out in optometric practice.

Involvement in screening for diabetes may be a natural progression in the development of the profession for some optometrists.

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Conflict of interest statement

There are no conflicts of interest.

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